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BASE DEVELOPMENT AND THE RAPID DEPLOYMENT FORCE:

A Window to the Future

LEWIS C. SOWELL, JR.

the national defense university

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by

Lewis C. Sowell, Jr.
Senior Research Fellow

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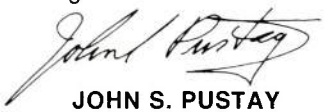
FOREWORD

Since the decision to create a Rapid Deployment Force (RDF), there has been much discussion about the adequacy of US strategic mobility and warfighting assets. These are essential attributes of an RDF, but US planners must also focus on the capability of an RDF to sustain operations in remote, underdeveloped regions of the world. To insure a successful deployment under such conditions, an RDF must have sufficient capability to construct and maintain essential base support facilities.

In examining RDF base development capability, the author, Colonel Lewis C. Sowell, Jr., USA, finds numerous potential problems in areas such as water and fuel supply, port and airfield facilities, intra-theater communications, and war damage repair. For purposes of analysis, however, he distills these many problems into three central issues: the need for a truly joint system for planning base development; the need for adequate staffing and education; and, most important, the need for a systems approach to base development planning.

These fundamental issues are neither new nor unique to RDF planning. All those concerned with the efficient use of defense resources and those concerned with strategic force planning may find lessons adaptable to their own circumstances. Thus the National Defense University is pleased to publish this monograph which was developed while Colonel Sowell attended the Industrial College of the Armed Forces. We endorse the author's hope that this study, while concentrating on the Rapid Deployment Force, will serve as a "window to the future" in force sustainability planning.



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ABOUT THE AUTHOR

Colonel Lewis C. Sowell, Jr., US Army, wrote this monograph while a Senior Research Fellow in the Research Directorate, National Defense University. A professional engineer, Colonel Sowell earned a bachelor's degree in civil engineering from Carnegie-Mellon University and a master's degree in civil engineering from the University of Missouri at Rolla. He is now director of facilities engineering at Walter Reed Army Medical Center. Before joining the National Defense University, he served as an Army engineer in West Germany, South Vietnam, Taiwan, and several locations in the United States. Colonel Sowell is a graduate of the Armed Forces Staff College, the Army War College, and the Industrial College of the Armed Forces.

PREFACE

Withdrawal of US forces from Southeast Asia in the early 1970s and a renewed emphasis on defense of Europe and Korea resulted in dramatic changes in military thinking and capability in the United States. Subsequently, manipulation of the price and supply of oil by the Organization of Petroleum Exporting Countries (OPEC), Soviet worldwide adventurism, and instability throughout the world in a number of less-developed countries caused US leaders to recognize the need for a military force that could be rapidly deployed in support of US national objectives. The development of a rapid deployment force with this capability has been plagued with problems that provide an insight to our true capabilities and limitations.

This study deals with one important factor in the US ability to rapidly deploy and sustain military forces at a great distance from our shores in less-developed regions of the world: the planning for and execution of base development. This factor is the keystone of sustainability. In this study the older, more familiar term, base-development planning, is used more often than the newer and not so well known but broader term, civil engineering support planning, which includes planning for repair of war damage.

Other important aspects in deploying and sustaining military forces at great distances from US shores are overflight agreements and forward basing; these subjects, however, will not be addressed in this monograph, which is limited to base development within a theater of operations.

To the logistician or engineer intimately familiar with base development, this monograph may appear simplistic and lacking in technical detail. But to the larger audience at the national defense planning level, those details are less important than the major issues the monograph addresses.

I assume sole responsibility for the content of this paper, but I wish to acknowledge the advice and assistance provided me by two experts in the field of base-development planning, Jerry Greco and Edward King of the Engineer Studies Center. I also thank Col. Fred Kiley, USAF, of the National Defense University, for helping make this paper more readable.

LEWIS C. SOWELL, JR.

EXECUTIVE SUMMARY

BASE DEVELOPMENT AND THE RAPID DEPLOYMENT FORCE: A WINDOW TO THE FUTURE

This monograph deals with the central question: "How can the United States better meet future base-development requirements of the Rapid Deployment Joint Task Force?" In a hypothetical scenario, a US Rapid Deployment Joint Task Force encounters real-world problems that it would face while deploying and attempting to remain in a theater of operations. US experiences reflecting strengths and shortcomings in base development are then examined. These important lessons emerge:

1. Staffing for base-development planning is invariably inadequate.
2. Successful base development generally results from accurate operational assessment, good planning, and adequate leadtime.
3. The US industrial base can meet base-development demands if it has time to react.
4. Improved coordination and continual updating of the base-development plan are required if that plan is to be successfully executed.

The study then addresses these base-deployment problems: repair of war damage; lack of water; lack of petroleum, oil, and lubricants; port operations and "logistics over the shore"; use of airbases in the theater of operations; establishment of intratheater lines of communications; and staffing for base-development planning.

From examination of these problems three major issues surfaced:

1. The need for a truly joint service system for base-development planning and execution. Components of this issue include standards of living, standards of construction, the services' facilities components sytems, a joint-service manual for base-development planning, and improvement of the Civil Engineer Support Plan Generator (the computer-assisted program for base-development planning).
2. The need for adequate base-development staffing and a more responsive staff process. We require better education of military personnel concerning base development, improved organization, and improved staffing.
3. The need to apply a systems approach to base-development planning. We should adopt a systems approach to force structuring, determining materiel requirements, and insuring the availability of required materiel.

These issues are not new. Through innovative approaches such as a Government subsidy to manufacturers and suppliers to maintain an immediately available inventory of common base-development materials, however, solutions to the recurring problems may be possible.

1. TO DEPLOY! TO SUSTAIN?

For want of a nail the shoe was lost,
For want of a shoe the horse was lost,
For want of a horse the rider was lost,
For want of a rider the battle was lost,
For want of a battle the kingdom was lost—
And all for the want of a horsehoe nail.
—Attributed to Benjamin Franklin

"NINEVEH": A SCENARIO

The fictional country of Nineveh, a coastal state in Southwest Asia, has requested US military support for its foundering government. The phosphate produced by rich mines along the country's northeastern frontier is extremely important as a strategic material for both the United States and its NATO allies. In addition, recently discovered, rapidly developing oil fields along the southeast coast have become important since US access to other world sources has been reduced. Nineveh's once poor economy has become highly dependent on the export of these two strategic items, placing a heavy load on its small, antiquated port.

In the past few weeks, the political situation in Nineveh has deteriorated to the extent that civil war and anarchy threaten to bring on disaster, from without as well as within. The desert in the west separates Nineveh from the nation of Dedan that has long been politically neutral. However, the plateau located near the northeast border has traditionally been in dispute with the neighboring Soviet satellite country of Magog. A large military buildup in Magog along the Nineveh border indicates the Magogis may be ready to attack their neighbor. In addition to the Magogi troops, there are large contingents of Cuban forces, several hundred Soviet advisers, and large stores of supplies and equipment.

In recent years, Nineveh, while trying to follow a neutral path to self-fulfillment, has not always followed the lead of other Islamic nations. Therefore, Nineveh has been reluctant to ask for their assist-

ance. Nation-building ties with the United States and a small military assistance and sales program have led to cordial US-Nineveh relations. Besides a large US commitment to import phosphate, a recent US-Nineveh oil company merger has economically tied Nineveh to the United States.

Communist and separatist paramilitary groups have recently damaged commercial airfields, railroad and highway bridges, the port, oil fields, and the phosphate mines. Nineveh's military establishment is little more than a national guard force that can act only to reinforce the nation's police. The prime minister has requested a large US military force to help stabilize the country and prevent a full-scale invasion by Magog and its Cuban and Russian allies. Tubal, a friendly but weak nation located several hundred miles from Nineveh, has offered the United States overflight and basing privileges.

In response, the United States has moved a Marine force into Nineveh, dispersed it along the coast near the oil fields, and started to land Army troops near the port. The Marines come both from forces already afloat in the Indian Ocean and those flown from the United States to a forward base in the same area. The Army troops also are arriving by both air and sea, but on a different schedule and with supply and equipment problems different from those of the Marine Corps.

In the temporary command post of the Rapid Deployment Joint Task Force (RDJTF), Lieutenant General Fleming, its commander, talks with his chief of staff, Brigadier General Smith, and the deputy chief of staff for logistics, Colonel Johnson:

BG Smith: General Fleming, to summarize, the Marines landed with no major problem, and now the Army combat troops are beginning to arrive. Air transport from the United States to the forward base is adequate, and the shuttle from there to Nineveh has commenced on schedule.

LTG Fleming: Sounds like things are progressing well. Not bad, considering no detailed contingency plan for this Nineveh operation had ever been developed and we had to prepare and execute an operation order on short notice.

BG Smith: Well, sir, not everything is rosy. A number of problems we had anticipated, and a few others we didn't expect, have cropped up. As the staff coordinator I have to accept some of the blame. As you know, too often the operations planners are so engrossed in the tactical aspects and so intent on winning the battle that they tend to forget the logistical requirements necessary to sustain their operations. I have asked our deputy chief of staff for logistics, Colonel Johnson, to tell you where we stand.

Col. Johnson: General Fleming, I will briefly lay the facts before you. Even though we have the required logistical support units and adequate air and sea transport to make the long haul from the United States and our overseas forward bases to Nineveh, we face major problems in *base development,* or to use the newer term, *civil engineering support.* Since there was no detailed contingency plan for Nineveh, neither the logistic annex nor the associated civil engineering support plan was developed. Actually, it probably wouldn't have made much difference even if there had been a plan. . . .

LTG Fleming: Why do you say that?

Col. Johnson: Sir, as you may recall from your days in the Pentagon, because the materiel required to support base development are not items that shoot or contribute directly to the fighting, they have a low priority in the budget, and usually end up being dropped or not funded.

LTG Fleming: That's true, I have seen that happen. I have even seen the services overlook them and omit them from the budget process entirely. Please continue.

Col. Johnson: The first problem is water. Fortunately we showed foresight in having an ocean tanker loaded with nearly 9 million gallons of water prepositioned in the Indian Ocean so that it could be brought quickly to Nineveh or wherever else required. Nineveh has always had a water shortage. During the dry season the government normally imports water by a tanker for the civilian population in the port city. Since the separatists have damaged the tanker, however, the Nineveh government can neither supply its own needs nor provide water for our military forces. We have obtained hydrological intelligence giving us a lead on some possible water sources in the country, but we do not have the well-drilling equipment necessary to

drill deep for it. In addition, the water may not be potable and it certainly will be brackish, like most of the available water in this country. Our soldiers just aren't used to this and will become sick.

LTG Fleming: Can't we make the water potable?

Col. Johnson: With our present equipment, we can purify the water, but purifying it doesn't remove the large mineral content and make it potable. To do this requires a reverse osmosis water purification unit that isn't available to our forces. In addition, we don't have the water pipelines or pumps, sufficient water tankers, or storage bladders and tanks to distribute and store water for our troops when they are widely dispersed.

LTG Fleming: What about using some of our fuel tankers and bladders for this purpose?

Col. Johnson: When we have looked into the possibility of handling water with equipment designed for fuel, we found problems with equipment compatibility. Furthermore, using fuel tankers and bladders would only compound the problem we are having with fuel distribution and storage. We face a similar problem in the shortage of a serviceable tactical marine terminal system for the over-the-shore bulk petroleum receipt, storage, and issuance of gasoline, diesel, and aviation fuel. The further we move inland, the more critical becomes the distribution of both fuel and water.

LTG Fleming: Obviously, without enough water and gas, our forces can't operate, much less accomplish our mission.

Col. Johnson: General, another critical problem is the port. We had thought we were fortunate to have the port available for our use, but there are major complications. The small-capacity port is designed for offloading container ships and loading ore ships. The rebels sabotaged the few cranes at the docks for container ship offloading. In this age of mechanization and specialization, few container ships have their own cranes and can offload themselves. Break-bulk shipping also has become a rarity.

Because we are severely limited in how much we can offload directly over the beach, we cannot sustain a large-scale operation at present. To make matters worse, the harbor, too, presents a prob-

lem. Since its construction during World War II and rehabilitation in the 1960s, the channel has silted up. Therefore, only shallow-draft ships can use it; deep-draft ships cannot come in to offload. The channel requires dredging if deep-draft ships are to use it, and we just don't have the equipment for the job at this time. It will take a major engineering effort of many weeks to make the harbor fully operational. Even then, our ability to support logistical requirements will continue to be limited by the port's small overall capacity.

LTG Fleming: That's discouraging. How about airlift?

Col. Johnson: The few short airstrips in Nineveh were built during World War II and can handle small commercial aircraft. The airstrips were not constructed to support the large volume of traffic and sustained operations that we require. Our engineers tell me that the wheelloads of our transports coupled with the volume of traffic we require would soon destroy a number of the strips. Much airfield matting, a large engineer construction effort, and considerable time will be required to upgrade them for sustained use. Fortunately, we can base tactical fighter aircraft in Tubal. The fighters will have a long flight to support us, but without those friendly bases in Tubal, we would have to depend almost entirely on naval and marine air support.

LTG Fleming: Intelligence tells me that some major railway and highway bridges in the mountains have been damaged or destroyed. How does that affect us?

Col. Johnson: Another problem. We were counting on using the railroad as a main supply route. Now it will take major bridge repairs to get it operational. Nineveh has only a few roads, and they're in poor shape. Only those in the capital and port city are paved. We will have to upgrade and maintain them. The railroad from the mines to the port was the major transportation system within the country. Even if we repair it, it is extremely vulnerable to interdiction.

LTG Fleming: Any good news?

Col. Johnson: Not much. As we build up our logistical base in this country, we remember that the power generated here is of a different voltage and cyclic rate than ours. We do not have the transformers, switchgear, and distribution system to use the electrical power

Nineveh generates. True, we have many small generators in the units, and some of our power requirements can be satisfied by our own large, nontactical generators, but as we increase our logistical support, our power consumption will increase greatly.

LTG Fleming: Colonel Johnson, you certainly haven't made my day. The more sophisticated our military forces become, the more troops we bring in, and the deeper we attempt to advance, the worse-off we become. In an underdeveloped country like this, our technology becomes an enemy. Maybe that last statement isn't entirely accurate. If we had prepared for fighting in this environment not only by providing the weapons systems, vehicles, and aircraft, but also by preparing the necessary support items as a part of our task force, we might have a chance of establishing ourselves for a sustained operation.

BG Smith: Sir, it is apparent that the staff needs to reexamine these problems. Even the best operations plan can't succeed without proper logistical support. We're here, sir, but a large segment of our operations will be curtailed or limited until logistics catches up. The fact is, we can have the best trained and equipped combat forces in the world, but what the logistician has to work with dictates when, where, and how long we can fight.

FACT OR FICTION?

The dialogue exaggerates the commander's surprise as he learns of the problems. (He would have been aware of many of them before his task force deployed to Nineveh.) The problems presented by Colonel Johnson, however, are real-world problems. They represent only a few of those that a rapid deployment force would face in establishing itself in a foreign country to accomplish its mission. These problems are not new. They can occur overseas whenever we begin a large-scale buildup, even in places where we already have forces stationed, such as in Europe or Korea. Today, the Armed Forces depend too much on sophisticated weaponry and equipment which complicate rapid deployment.

COULD "NINEVEH" HAPPEN?

We are accustomed to hearing that our Armed Forces lack the latest model tanks, aircraft, and other weapons systems. The quality and readiness of the men and women in our forces are sometimes

questioned. More recently the problem of strategic mobility has surfaced, implying that with our present air and sea transport fleet "we can't get there from here." Occasionally the question of sustaining a force in a theater of operations arises, but it is usually addressed in the context of the logistical support units and of the availability and flow of items such as ammunition, fuel, and repair parts.

Too often the problems associated with base development in support of the combat forces are brushed aside, dismissed, or completely neglected. Unless base development is properly planned and executed, however, the extension of the military force will suffer. Our task force can be compared to a knight's mailed fist and arm as illustrated in the figure. A fist may have powerful potential but may find its strength drastically impaired by a weak, underdeveloped wrist. Only if we properly develop the wrist to its full potential will the fist then be capable of delivering a powerful blow.

A FOCUS

How can the United States better meet the base-development requirements of the Rapid Deployment Joint Task Force? Most of the problems we are likely to encounter have already surfaced in our conflicts since World War II. A sure understanding of that history and the bases for the current problems will help us anticipate future base-development requirements.

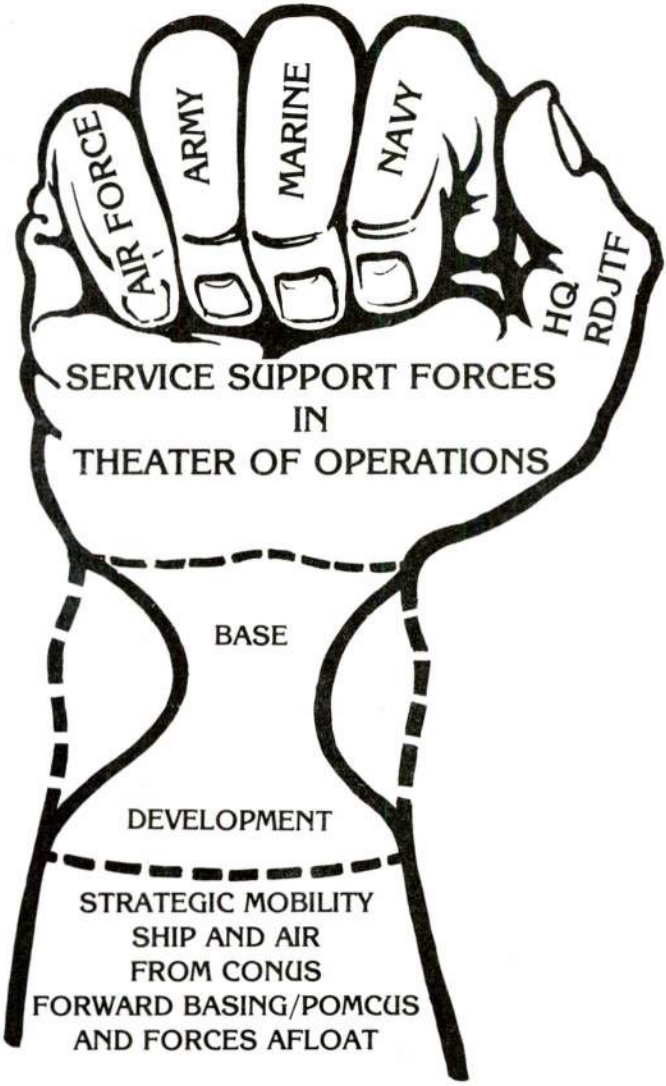

Figure: The Role of Base Development in Delivering Combat Power

2. WHERE HAVE WE BEEN?

> We may gather out of history a policy, by the comparison and application of other men's miseries with our own like errors and ill deservings.
>
> —Sir Walter Raleigh, in the preface to *Historie of the World*

Base-development planning has become more important and complex as the sophistication of military forces has increased. To evaluate the experiences that are of value to future base-development planning, let us begin with World War II.

WORLD WAR II (1941–45)

Base-development problems and solutions of World War II cover many aspects of the subject. The 3 years of island hopping in the Pacific, beginning 6 months after Pearl Harbor, constitute a good example of base-development planning and execution by Army Engineers and Navy Seabees, often under adverse conditions. The planning leadtimes prior to the invasion of individual islands usually were not long, but then the forces did not require sophisticated support. Fighter and bomber airstrips were, by today's standards, rudimentary. Only as our forces approached the shores of Japan did long and well-developed runways become necessary to support our most sophisticated long-range bomber, the B-29. Although the land force was not highly mechanized, there was always a need for port facilities. Not all islands lent themselves to the siting of good ports, but our forces developed an unequaled capability for an over-the-shore operation. We had large quantities of amphibious craft and could discharge ships offshore. Ports were improved as required to support the operations, but generally there was sufficient leadtime to anticipate requirements and obtain the necessary materials.

Base-development planning for the invasion of Normandy is the best example of detailed planning for a large-scale operation with

follow-on construction. The formation of a large planning staff, the staging of men and materials in a forward base (England), the construction of a manmade port that could be floated across the channel and emplaced, the rapid construction of a petroleum, oil, and lubricants (POL) pipeline across the channel, and the quick rehabilitation of captured ports are excellent examples of successful planning and execution. Still, it is important to remember that the United States had 2½ years from the declaration of war on Germany to plan, mobilize, and implement this complex plan.

At times the rapidly advancing allied combat forces in Western Europe outran their logistic support and made follow-on base development critical. We met these challenges by modifying plans and executing them with imagination. However, we were fortunate in that base-development problems in Europe were not so severe as those that could be expected in a region with considerably less infrastructure.

KOREA (1950–54)

When the North Koreans invaded South Korea in June 1950, the number of US forces within the country was small, and even though we deployed additional forces we soon found ourselves in a shrinking perimeter around the major port of Pusan. General MacArthur's rapid advance north to the Yalu River and the Manchurian border following his surprise amphibious landing at Inchon harbor created a long, cumbersome logistical tail. This problem was somewhat resolved with the subsequent invasion by Communist China and the withdrawal of US and South Korean troops to a line near the 38th parallel. This pullback created a nearly static battlefront reminiscent of World War I trench warfare.

When war broke out, there was no base-development plan for Korea, and the lessons of World War II base development had been forgotten. The engineering staff of MacArthur's headquarters was expanded and on a crash basis began to prepare for Korean base development. Supply catalogs were scrutinized and construction materials were ordered in bulk. The procurement system and US industry reacted, and after nearly 6 months the materials began to arrive.

Logistical operations were greatly hampered by the inadequate infrastructure in Korea: the road system was almost nonexistent, the

rail system small and lacking rolling stock, the World War II airfields needed to be upgraded to accept modern aircraft, and the ports were antiquated and limited. As a result, tactical operations, too, were limited.

Once the theater of operations had been reduced, with its northern boundary near the 38th parallel, and materials and construction units had arrived, an extensive base-development program took place in the stabilized area. The construction program also rebuilt and enlarged Korea's destroyed transportation systems.

In Korea the United States was caught with neither a base-development plan nor a means to quickly upgrade the country's infrastructure, so tactical operations suffered. Once the United States had time to plan, respond, and execute its base-development effort—even though some of the circumstances were dictated by enemy initiative—the outcome was eventually successful.

LEBANON (1958)

Following aggression by the United Arab Republic (Syria) in 1958, the Lebanese government asked for US military assistance to help stabilize the country. The United States had several months to develop a concept of operations before sending a joint task force in mid-July 1958. No significant base-development problems surfaced other than initially locating and providing shelter for the task force headquarters. The United States was not involved in combat, nor was the entire task force deployed to Lebanon as originally envisioned. US forces were withdrawn in late October 1958. Good planning and adequate leadtime proved important in the success of this small operation.

DOMINICAN REPUBLIC (1965)

Following the deployment of US forces to the Dominican Republic in late April 1965, it became apparent that planners had given little consideration to base-development planning for this operation. Therefore, in May 1965, base-development planning was finally begun to support the forces that had been deployed and might remain for a period of up to a year. The Pentagon received the base-development plans, including the designs and estimates, in early July 1965. Officials found the standards too elaborate and, in Sep-

tember 1965, told the deployed force to reestimate and resubmit. The planning staff was small and the budget process (using Operations and Maintenance, Army and Military Construction, Army funding) quite burdensome. Even during the construction phase, the base-development plan was continually changed. The entire process was late, slow, cumbersome, and nonresponsive—all of which indicate that previous lessons learned had been forgotten even for this small operation close to US shores.

VIETNAM (1965–70)

Although the United States had military advisers in South Vietnam subsequent to the French ouster in the mid-1950s, it was the early 1960s before a large Military Advisory Assistance Group—with supporting helicopter, communications, and Air Force airlift units—evolved. The real buildup of US forces in South Vietnam started in 1965 with the deployment of US Marine, Army, and Air Force combat units and their support elements. Even with the so-called "phased response" in which military forces gradually increased to their peak strength 4 years later, many areas of base development lagged. The lag resulted from an overestimation of South Vietnamese military capabilities plus an underestimation of tactical considerations in 1965 and 1966, which led to US deployments that far exceeded the anticipated base-development requirements.

Logistically, the United States was providing materiel for Vietnamese, American, and third-country forces including those of Korea and Thailand. It would be unfair to criticize US industry for the delays. Rather, because of Vietnam's underdeveloped infrastructure, much time was required to complete construction of the ports, airfields, highways, and railroad system necessary to meet both military and civilian requirements. Frequent guerrilla attacks on the system also reduced its effectiveness.

The railroad consisted of a strip along three-fourths the length of the country from Saigon north to the demilitarized zone and a second line from Saigon to the Cambodian border at An Loc. Large sections in the middle and northern part of the country were severely damaged by the monsoons in November 1964. Because of the monsoons and subsequent Viet Cong interdiction, the railroad was operational only in short, unconnected sections throughout the war. A major US construction effort throughout the country developed numerous air-

fields capable of handling US and Vietnamese fighter-bomber and transport aircraft, and designed to have every point in South Vietnam within 25 kilometers of an airstrip.

The requirement for rapidly developing new ports and expanding existing ones throughout the country was of utmost concern. Once the military equipment began to flow from the United States, a tremendous backlog of loaded ships developed. It was not uncommon to have transport ships sit offshore in South Vietnamese waters for 30 to 40 days before they could unload their cargo. Existing ports, such as the one at Saigon, had to be expanded and new ones built, as at Cam Ranh Bay. Port construction is a lengthy process even when using high-capacity dredges and DeLong piers fabricated in the United States and towed to Vietnam.

Troop cantonment areas quickly sprang up all over the country. The living standard varied from bunkers and tents in Army and Marine outposts and basecamps to near-"stateside" standards in prefabricated dormitories at airbases and major headquarters. A requirement for wells and power generation existed throughout the country.

As the "graduated response" and the threat changed, so did base-development requirements. Great flexibility in planning and execution of the program was needed. Shortages of construction materials occurred, often as a result of not knowing where the items were stored within the US military depots in South Vietnam. Since requirements changed continually and materials did not arrive in the order in which they had been requisitioned, keeping track of what was actually on hand, due in country, and in need of requisitioning was a nightmare.

In early 1966 the Directorate of Construction was formed to manage the US construction program. The directorate was to make maximum use of the construction capabilities of the services (Army Engineers, Navy Seabees, Air Force Red Horse teams), of US contractors in Vietnam, and of Vietnamese contractors. A political decision not to call up the reserve components severely restricted the military's construction capability, however, since approximately two-thirds of the total engineer units are in the reserves. As a result, for the first time in our history, more construction was performed within a

theater of operations by contractors than by the 42 military construction units of battalion strength deployed to Vietnam.

Base development in Vietnam, like the fighting in Vietnam, was unusual. Guerrilla warfare, basecamps and outposts similar to those used in Indian Wars, uncontested air superiority, and a total control of the seas contributed to uncommon, atypical lessons learned, some of which may never apply again. For this reason, base-development lessons learned in Vietnam should be cataloged but applied with discretion in the future.

IMPORTANT LESSONS GLEANED FROM EXPERIENCE

- Initial staffing for base-development planning is invariably inadequate and requires considerable augmentation.
- Successful base development generally results from accurate operational assessment, good planning, and adequate leadtime to execute the plan.
- The US industrial base can meet base-development demands if it has time to react.
- Careful coordination and continual updating of the base-development plan are required if it is to be executed successfully.

3. WHERE ARE WE NOW?

> Those who cannot remember the past are condemned to repeat it.
>
> —George Santayana

TODAY'S RAPID DEPLOYMENT FORCE

Since the withdrawal of US forces from Vietnam in the early 1970s, US military planners have been preparing for a highly mechanized war in the NATO environment of Europe and for a small war in Northeast Asia, the so-called one-and-one-half-war concept. President Carter and his advisers in 1976 recognized the need for a rapidly deployable force with a non-NATO-related mission. On the basis of a strategic appraisal and a study of our forces completed in February 1977, the President directed the Department of Defense to maintain forces for deployment in addition to those required for NATO. The Secretary of Defense therefore identified such a force structure in the *Fiscal Year 1981–85 Draft Consolidated Guidance*. In August 1979 the Joint Chiefs of Staff began to take specific action on the 5-year program. This process accelerated following the seizure of US hostages in Iran and the Soviet invasion of Afghanistan in late 1979. As a result, the Rapid Deployment Joint Task Force was formally established in March 1980.

Ten years ago, few people would have predicted the oil crisis of the mid-1970s, the power of OPEC, the fall of the Shah of Iran, or the Soviet invasion of Afghanistan. Today most would predict that the decade ahead will have its own share of crises, and that some of them may require the deployment of US forces. Although some of the problems to be discussed here may have application only in Southwest Asia, these real-world problems could substantially restrict the deployment of US forces in other parts of the world.

REPAIR OF WAR DAMAGE

Southwest Asia, unlike Western Europe, has few ports and airfields capable of supporting deep-draft container ships, a large volume of tonnage, or heavy air traffic. War damage by sabotage or enemy artillery and bombing prior to entry of US forces would prohibit a large-scale deployment of US forces. True, we could drop airborne soldiers and embark Marines over the beach, but such action is not large-scale deployment. Even the long-term sustainability of these forces eventually depends on the use of ports and airfields, because the logistics-over-the-shore (LOTS) capability is severely limited by a lack of units and watercraft. A similar problem of sustainability could occur even after our forces had established a military presence, if war damage were to affect the infrastructure on which the logistic base depends: ports, airfields, road and rail nets, pipelines, storage and maintenance areas, water and electrical power production, and distribution systems.

In any case, war-damage repair is a serious problem requiring utmost attention by the planner. There is no precise answer: war damage is difficult to accurately predict, and damage repair requires many engineers and large quantities of special materiel. Little of this materiel is readily available, even in highly industrialized nations, while virtually none will be found in the emerging nations of Southwest Asia.

LACK OF WATER

A lack of potable water in an arid region can be the critical factor in supporting a military force. In 1980 one of our planners' first discoveries was a lack of cataloged, detailed intelligence data on water resources in parts of Southwest Asia. Even if an underground water supply could be located, the military did not have the drilling equipment or the expertise for development of shallow (up to 1,500 meters) or deep (beyond 1,500 meters) wells. Conventional water purification equipment was available, but it was not the type (reverse osmosis water purification units) that removes minerals and salinity, and thus makes water potable. Large water tanks and bladders were not available for storage, nor were tankers or a pipeline for its transportation. According to medical authorities, the extreme heat in parts of Southwest Asia can seriously affect stored water; hence equipment to cool the drinking water is essential. But planners consider

use of large ice plants infeasible, and appropriate portable coolers did not exist. Without water, vehicles will not operate; without potable water, people cannot survive.

PETROLEUM, OIL, AND LUBRICANTS (POL) SUPPLY PROBLEMS

POL is the lifeblood of a mechanized force, which, in turn, is the backbone of the US military. If our forces were to find themselves operating in an area of vast petroleum reserves with facilities capable of refining the oil but without the fuel needed to operate a modern military force, the situation could be a tragic paradox. Some people have suggested that, with all this potential available, the United States could take what it needs for its own use. This assumption could be dangerous if pumping stations were destroyed, sections of pipeline interrupted; storage tanks left in flames; and critical refineries destroyed, damaged, or incapable of producing the proper fuel.

The US military has lacked the capability to install a tactical marine POL terminal, necessary to insure that fuels can be brought from a tanker located offshore or in port to land-based bladder farms and distribution points. In addition, the ability to distribute the fuel by pipeline or motorized tanker is restricted by a lack of pumps, pipelines, tanks or bladders, and motorized tankers. The further inland US forces are deployed, the more acute the problem becomes.

PORT OPERATIONS AND LOGISTICS OVER THE SHORE

In contrast to our World War II capabilities, US forces today are severely limited in their ability to provide logistics over the shore (LOTS) in the quantities required to support a large combat force. This situation is due not only to the lack of watercraft, but also to the large number of military units in the active and reserve force structure required to provide this support. Because planning in the 1970s focused on operations in Europe with its many well-developed ports, logistics operations in support of our military have come to depend on existing ports, including their container-handling facilities. Containerized ships are used by nearly all major world shipping powers for normal trade; they make up most of the available shipping capacity. Few of these ships, however, have the equipment on board to load and unload individual containers. Instead, the typical container ship must be loaded and unloaded from the pier using gantry cranes.

Modern ships, too, are larger than vessels of 20 or 30 years ago, and they have deeper drafts that restrict their use to certain ports. Most ports or approach channels require periodic maintenance dredging to insure that depths are adequate to allow free flow of ship traffic. Dredging equipment was often critical to base development in Vietnam; providing a dredge in a theater of operations, however, is something that requires a long leadtime. If the United States is to deploy and sustain a military force, the theater of operations must have ports and harbors of sufficient capacity and/or LOTS operations.

USE OF AIRBASES IN THE THEATER OF OPERATIONS

In mid-1980 the Air Force displayed its capability to deploy by preparing a military airfield at an existing strip in Egypt and deploying a half-squadron (12 aircraft) of F-4 fighters in the "Proud Phantom" exercise. The exercise demonstrated the Air Force's ability to deploy throughout the world to locations with existing airstrips. It also demonstrated how well the Air Force "bare base" equipment ("Harvest Bare"/"Harvest Eagle" exercises) is capable of supporting an Air Force operation. A weakness in the system is the amount of air transport necessary to carry squadron personnel and the associated facilities needed to keep 12 aircraft operational. Five C-141s and 28 C-5s were required to transport 4 million pounds of equipment and 450 personnel to Egypt in phase one of the airlift. The bare base system is good, but it is limited to locations that already have a runway of proper length and capacity and an access to water. Even though the system requires a tremendous amount of logistical support, the most severe shortcoming is the Air Force's lack of large quantities of bare base equipment.

ESTABLISHMENT OF INTRATHEATER LINES OF COMMUNICATION

In the developed countries of Western Europe and even in South Korea, the US military is accustomed to having good road nets capable of sustaining a large volume of traffic. Such a network usually does not exist in Southwest Asia or other emerging nations. To expand, improve, or repair road nets and their bridges requires an exorbitant amount of engineer effort, much time, and often large quantities of material. As a result, logistical support to the forward combat troops could be hampered. Mining, demolition, and guerrilla interdiction of road nets, requiring additional engineer repair effort, could be a further hindrance.

STAFFING FOR BASE-DEVELOPMENT PLANNING

The Rapid Deployment Joint Task Force (RDJTF) is not properly staffed to do base-development planning. Within the headquarters of the logistics section (J-4), only two engineers are assigned. Besides having duties in base-development planning, they are also the staff engineers for the headquarters. A look at the Air Force and Army components for the RDJTF reveals a similar problem.

The Army Chief of Staff in 1971 assigned the Engineer Studies Center, a field agency of the Army's Office of the Chief of Engineers, the task of establishing the Army Base Development Planning Assistance Office (BDPAO). Through the years the office has developed or helped the various commands to develop more than 20 base-development plans, thus establishing the BDPAO as the undisputed experts.

The Rapid Development Joint Task Force planners turned to the Army Forces Command as the component responsible for base-development planning. Since the Army Forces Command was essentially without expertise, it in turn assigned BDPAO to be its agent. As BDPAO began to work, another proposal resulted in the assigning of this important job to the Headquarters, 416th Engineer Command (ENCOM), US Army Reserve. The selection of the 416th ENCOM, a large organization with many talented engineers, appears to be a workable solution to the problem of providing a strong, permanent, base-development planning element for the Rapid Deployment Force. But to perform the necessary planning properly, the service components still require a permanent solution to the staffing problem.

RETROSPECT

The base-development problems that have just been described are typical of those that immediately faced the newly formed Rapid Deployment Force. If the recommendations of an extensive base-development study made by the Army's Training and Doctrine Command in the mid-1970s had been adopted, many of the problems initially facing the Rapid Deployment Force would have been eliminated.

One of the first steps the United States took was to position a seven-ship force, including tankers for fuel and water, to serve as a "depot" in the Indian Ocean at Diego Garcia. The US Army has formed well-drilling units and procured drilling equipment. It also is obtaining reverse osmosis water purification equipment, rubber bladders for water storage, additional tankers for water distribution, and cooling units for the drinking water. In fact, water is considered such an important matter that several times a general officer board has been convened to expedite the solution of this problem.

Officials are working to make an existing tactical marine terminal operational and more efficient; officials are also procuring more equipment to increase the fuel delivery capability. The planned purchase of roll-on/roll-off (RO/RO) ships will enhance strategic mobility and boost the base-development capabilities because these ships, which do need a pier, do not require the marine crane support necessary to unload containerized ships. Planning for additional terminal transportation units and their equipment is encouraging.

A solution to war damage, other than preventing it, is to preposition repair kits and other items necessary to make repairs. Politically it is not feasible to store these items in most of the countries where they would be required, as is done in Western Europe. Therefore, the most practical solution is to store equipment at forward bases in the vicinity of Southwest Asia or aboard prepositioned ships in that area. Steps are being taken with items such as airfield matting, a DeLong pier, and other items for repair. The prepositioning of war damage repair equipment is perhaps one of the most vital undertakings to insure the United States' ability to successfully deploy and sustain a military force.

Conversion of a high-speed commercial liner to a hospital ship, as has been proposed, would provide sophisticated medical support rapidly for a deployed force; would reduce base-development requirements; would conserve construction materials and forces; and would reduce requirements for electric power and security.

Even though the many problems of the base-development planning associated with the Rapid Deployment Joint Task Force are at different stages of solution, a serious threat remains: The United States is not yet adequately prepared to deploy and sustain a large military force to underdeveloped countries under adverse conditions.

4. WHERE DO WE NEED TO GO? THE ISSUES

> . . . we learn from history that men never learn anything from history.
>
> —George Bernard Shaw, in the preface to *Heartbreak House*

We cannot afford the luxury of assuming that commanders and staff planners know, remember, or consider the previous lessons learned in base-development planning and the recommendations of studies dealing with base-development planning. The only safe assumption is that they do not. We must strive to insure that the commander and his staff consider base-development issues while preparing the operational and logistical aspects of a deployment and subsequent operations.

The issues presented in this chapter are not necessarily new. The subordinate issues are listed to help simplify the evaluation process; these subissues must be addressed if the major base-development issues are to be resolved.

ISSUE: THE NEED FOR A TRULY JOINT SERVICE SYSTEM FOR BASE-DEVELOPMENT PLANNING AND EXECUTION

Rare is the contingency plan that calls for a military service to operate completely independent of another service. Most situations require interaction between two or more services. Joint Chiefs of Staff publications reflect this reciprocity in their instructions on base-development planning. In reality, however, the services are still parochial. Each service department has its own "facility component system," base-development planner's manual, and interpretation of standards of living, standards of construction, and philosophy of

base-development planning and execution. As a result, great differences often occur in the standards under which members of the different services live and work, even while they are near one another in a theater of operations. Without conscious effort, little change can be expected in the future. This parochialism results not only in a perception problem that can affect morale but also in serious logistical problems, since either overbuilding to an unrealistically high standard or underbuilding can diminish support for the mission. Service planners need to eliminate the possibility of these undesirable occurrences in base-development planning.

Subissue: Standard of Living

The way the soldiers live, their level of health and comfort, and the conditions under which they work in the rear of the combat zone—all need to be clearly defined and illustrated so that little room for interpretation of the standards remains. Commanders traditionally want the best for their troops. Therefore, unless the standard of living is clearly described in detail, commanders will feel justified in trying to exceed a poorly defined standard by rationalizing that they are just doing their duty in improving the lot for their troops. Living and working standards must be set with the understanding that certain duties require a better work standard or environment than others because of the sophistication of the equipment: for example, data processing, electronic repair, high-level communications, and aircraft maintenance.

Subissue: Standards of Construction

Standards of construction tie in closely with standards of living. For a theater of operations, planners consider two standards of construction: (1) the "initial standard," which covers the period from arrival to 6 months and is characterized by austere facilities, and (2) the "temporary standard," which applies to sustained operations from 6 months to 2 years. In some cases the second standard will replace the initial one but in others it could be used from the start of the operation. The Joint Chiefs of Staff publications list these standards; however, as with standards of living, the list needs to be expanded and enlarged to clarify it, to cover more of the exceptions, and to be directive in nature. This need is closely related to the next subissue, the services' facility component systems.

Subissue: The Services' Facility Component Systems

The facility component systems of the Army, Navy, and Air Force appear similar but are quite different and, to varying degrees, outdated. These systems provide engineering designs, bills of materiel, logistical data, and an automated database that describes preengineered facilities, installations, and structures commonly required for base development and lines-of-communication activities in a theater of operations. The Army Facilities Components System, developed as a result of base-development planning difficulties early in the Korean War, is the most extensive. Although the Navy's Advanced Base Functional Component System is smaller, it is much older, having been developed during World War II. Each service maintains, updates, and uses the systems for its own purposes as well as for base-development planning. The systems as presently configured, however, are not fully compatible and cannot be called joint systems.

In the mid-1970s, the Quad-Service Advanced Base Design Coordinating Group, an informal group with representatives from each of the services meeting quarterly, made moderate progress. The group, operating under the patronage of the Office of the Joint Chiefs of Staff, discussed the problems and then assigned areas of interest and responsibility for developing facilities to avoid duplication while promoting standardization. A strong feeling of cooperation and mutual support developed among the services as a result of this group's activity. Unfortunately, this organization quietly faded away, although recently some interest has been expressed in reestablishing the group.

The services need a truly *joint* system for facility components. They should retain their individual systems but planners should assign responsibility for different functional areas—such as troop housing, maintenance, ports, airfields, and bridges—to the different services. The Office of the Joint Chiefs of Staff should standardize the format for the information to be provided, making it a joint system, but the individual services should be able to have available within the system additional information that might be necessary to meet their specific needs for uses other than joint base-development planning.

Subissue: Joint Service Manual for Base-Development Planning

The services and the Joint Chiefs of Staff have their own versions of what is required for base-development planning. It logically follows that if the facility component systems are joint systems, and the base-development planning in a theater of operations is a joint process, the manual for the planners should be a joint manual. One service, such as the Army, which is the largest user, can be assigned the task of writing and coordinating the manual. Nevertheless, it needs to be a truly joint effort reflecting the needs of all the services.

Subissue: Improvement of Civil Engineer Support Planning Generator

The Civil Engineer Support Planning Generator (CESPG) is the computer-assisted program that the Joint Chiefs of Staff have standardized for developing the civil engineering support plan (CESP), the newer term for the base-development plan. This program uses information from the time-phased force deployment data, major command input, and other data to determine personnel and equipment strength and to coordinate when and where the forces are going. The program identifies deficiencies and provides estimates to generate requirements for facilities and war-damage repairs. The scheduling phase matches existing engineer construction capabilities against the engineer construction and repair workload generated by the facilities and war-damage efforts of the previous phase. The final product contains the facility and logistical data required and produces a document with numerous methods of reporting in the Joint Operations Planning System (JOPS) format. Commanders and their staffs at a higher level can review the resulting draft CESP (base-development plan) and update it as required. If the contingency operations plan is implemented, the CESP becomes the directive for the execution phase.

CESPG is a good program and serves the Joint Chiefs of Staff well in providing gross figures in different formats for the base-development planner, but the program can be improved. For example, the format of the construction or repair data provided by the CESPG is not responsive to the needs of the engineers responsible for the execution phase. The information must be reprogramed in a different format to insure that construction priorities are adhered to and that projects are managed in an efficient manner. Evaluation of the CESPG product and comparison of the CESPG output with the

needs of all users (planners and executors) should be a continuing goal.

ISSUE: THE NEED FOR ADEQUATE BASE-DEVELOPMENT STAFFING AND A MORE RESPONSIVE STAFF PROCESS

The services' awareness of base-development planning is decreasing and needs to be revitalized through the military education process. Planners also need to insure that base-development planning remains a responsibility of the logistician and that headquarters are adequately staffed for the job.

Although the present base-development planning process can be cumbersome and is not always fully responsive, planners can take a few simple steps to improve the situation. Coordination through the proper channels and all necessary headquarters is time-consuming, especially during peacetime. However, the process should be abbreviated and unnecessary steps eliminated when time becomes critical.

Subissue: Base-Development Planning Knowledge of Military Personnel

The number of personnel within the military who understand the base-development planning process is diminishing because the subject has been eliminated from most programs of instruction at military educational institutions. Using the Army as an example, in the mid-1970s the base-development planning process was an important part of the Engineer Officer Advanced Course, the Army Logistics Management Course, the Command and General Staff College, and the Armed Forces Staff College (a joint college). Virtually every officer attaining middle field grade to general officer rank was exposed to base-development planning.

Now, within the Army education system, the subject is discussed only in an orientation briefing at the Engineer Office Advance Course and in the Army Logistic Management Course. This cutback in education concerning base-development planning is depriving future senior commanders and staff officers of knowledge of a process that is key to the success of their combat operations. In addition, the logisticians and engineers who will operate the system are not being

fully trained and provided with the tools necessary to become the experts in implementing the process.

A complete rethinking of the education process and requirements in base-development planning is in order for all the services. Future commanders and staff officers need to become aware of the importance of base-development planning. The middle-level service college should provide this awareness, and the senior service colleges should reinforce it by considering base-development planning issues. Similar logic suggests that the operators of the system, logisticians and engineers, require more than just the cursory knowledge now provided at their respective schools.

Subissue: Base-Development Staff Organization

Traditionally, most base-development planners have been Engineer Officers, because Engineer Officers actually construct the facilities. However, base-development planning is as much the responsibility of logisticians as of engineers, and the matter should not be relinquished by or divorced from logisticians. Having the engineers doing the planning and execution is all right as long as the logisticians remain informed and participate actively in the process. Too often, however, logisticians become involved only after a problem has occurred. They should be active participants from the beginning. The Deputy Chief of Staff for Logistics (J–4 or G–4) should have responsibility for base-development planning. This responsibility does not preclude the J–4 or G–4 from calling on the staff engineer for assistance and expertise. Coordination and a close working relationship between logistician and engineer should be the rule.

A streamlined review process is important during time of hostilities, imminent deployment, or deployment. The service component commands can accomplish this by cooperating among themselves and with the joint task force staff or unified command staff on the base-development plans. The same can occur in the Pentagon with a joint review of the proposed plan by the services and JCS. Once these "technical" channels of coordination and cooperation between the various headquarters are well established and exercised, the process of generation, review, and regeneration can be expedited.

Subissue: Staffing for Base-Development Planning

To accomplish proper base-development planning, a headquarters needs well-trained, knowledgeable individuals, an institutional memory, and adequate staffing. Unfortunately, when personnel economy measures are imposed and forces reduced, one of the easiest places to make cuts has been the office of the base-development planners. As just one example, a major headquarters has been reduced from 17 to 4 planners since the Vietnam War ended. This example is typical of virtually all military headquarters. The services need to provide adequate staffing for the base-development planning positions, provide a good civilian mix to insure an institutional memory, and arrange for both formal and on-the-job training of new members.

ISSUE: THE NEED TO APPLY A SYSTEMS APPROACH TO BASE-DEVELOPMENT PLANNING

As has been emphasized earlier, the United States has concentrated, since withdrawing from Vietnam, on maintaining its ability to fight a war in Europe and, to a lesser extent, Korea. The emphasis has been on "tooth" (fighting forces) at the expense of "tail" (logistical forces) in two geographic areas with highly developed infrastructures. The "tail" has been so reduced, and such great reliance has been placed on host-nation support, however, that military and civilian leaders have raised questions about our ability to support the "tooth." With the formation of the Rapid Deployment Joint Task Force, it quickly became apparent that the "tail" was inadequate to provide the required support in the developing countries. The pendulum had swung too far and the United States was not fully prepared to respond adequately to various large-scale contingencies in these countries that are very remote from the United States.

Because there are many possible scenarios in a variety of locations, a systems approach is necessary for force structuring and determining the materiel required to solve this dilemma.

Subissue: Systems Approach to Structuring Forces and Determining Materiel Requirements

An element of the Air Force serves as a good example of this type of approach. A fighter squadron of approximately two dozen aircraft is the "weapon" that can be deployed overseas to a theater of operations to support Army ground operations, to attack enemy in-

stallations, or to defend against enemy aircraft. Because of the aircraft's sophistication and the leadtime required to construct a runway, the unit must have an adequate existing runway and water supply.

The Air Force has planned for and assembled all the support elements required to deploy these aircraft and sustain them—that is, personnel to provide the required support and maintenance, transports to haul personnel and equipment, stratotankers for refueling, and "bare base" sets (modular, relocatable, and air-transportable facilities and equipment that can be flown in and quickly erected). The bare base sets provide all the support facilities, utilities, and equipment required to turn a runway into an operable airfield. The Air Force has "Red Horse" teams available to construct or erect these facilities and "Prime Beef" teams to maintain and operate the civil engineering base functions. Here is a "system" that has everything required to deploy fighter aircraft.

The Army, as a close-combat, land-based service, has a somewhat more complex problem of deploying and sustaining itself, primarily because it depends on the Navy and Air Force for its strategic mobility. Other shortcomings within the Army have been previously discussed, making it obvious that the Army cannot deploy, without major problems, a large combat force such as a corps and sustain it in a hostile environment in most underdeveloped nations upon short notice.

The Marines also have a "complete system," with their amphibious capability presenting great flexibility. However, the size of the corps, the quantity of their amphibious lift, their worldwide deployment, and the degradation of marine logistical support at great distances beyond the beachhead also limit the overall capability of the Marines.

The Joint Chiefs of Staff and all the services need to look at the projection of military power on a systems basis and not ignore or dismiss the problems. This is not to say that all military forces should have the capability of being projected simultaneously, since such a proposal is not realistic and would cost too much in manpower and materiel. A Rapid Deployment Joint Task Force of several Army and Marine divisions, air wings, and carrier task forces, however, should have the required units of trained personnel, equipment, materiel,

and strategic lift to be capable of being deployed to any overseas location and sustained there. A complete system is required, starting with the fighting man on the ground, in the air, or on the sea and continuing back through all the logistical support and facilities.

Subissue: Availability of Required Materiel

Some military elements have all the equipment and materiel required to deploy and sustain; in the previous example, the Air Force fighter squadron had the bare base system to support it. The bare base system, however, has a severe limitation. In the early 1970s large quantities of bare base items were programed to be purchased then and later. Subsequent funding never materialized, so the Air Force purchased only enough bare base items to support several squadrons. The facilities and equipment are expensive; in a theater of operations, however, often they are less expensive than permanent construction. In addition, if bare base material is stockpiled, it is ready for immediate use and can be relocated and reused.

Certain materiel and equipment should be available to avoid long procurement leadtimes, and personnel should be trained to erect and employ them. A good example of this type of readiness is the Army's nontactical generator program (750 kilowatts and above), a mission of the Facilities Engineer Support Agency, a field agency of the Office of the Chief of Engineers. The agency has available trained personnel, a number of generators, and other electrical equipment to provide electrical support in the rear areas of a theater of operations.

Planners recognize the impracticality of purchasing enough materiel to cover all possible contingencies. Still, a number of these items should be bought and stocked, particularly those with long production leadtimes, such as piers, water purification equipment, generators, electrical switching, transformers, POL marine terminals, storage, and distribution systems. In addition to sufficient tentage, some relocatable buildings need to be in the system even though they require a shorter procurement time than the items just mentioned.

For the past 10 years Army logisticians and engineers have attempted to obtain a stockpile of base-development items, most of which have been previously described. Called the "BOM" (Bill of Ma-

teriel) project or more recently the "BADEP" (Base-Development Project), the effort has never reached the funding stage. Unfortunately the attitude has been "If it doesn't shoot, it can't compete."

Another possibility might involve some of the more common items, such as relocatable buildings and general construction items (lumber, cement, wiring, pipe, etc.). The Government could pay suppliers or manufacturers to keep these items continually in their inventory; the inventory would be rotated, always assuring a fresh stock. The inventory would reflect the latest in technological developments, as in relocatable buildings and utility systems, eliminating obsolescence. Congress would have to pass special legislation to allow this inventory system to function. (This type of legislation could also be applicable to other defense-industry areas and could prove to be very important.) It is apparent that a combination of the two programs—military procurement of items that have long leadtimes and a subsidy to suppliers to maintain a stockage level—is sorely needed.

The United States cannot afford to have a military establishment that does not possess the capability of sustaining a deployed military force. The public cries of indignation that arose when hostages were taken in Iran and the Soviets invaded Afghanistan culminated in the 1980 election landslide, demonstrating that the American public is ready to support a strong national defense system. Congressional and military leaders need to respond to this sentiment by effecting the required changes.

5. PREPARING FOR SUSTAINABILITY: SOME RECOMMENDATIONS

Early in this monograph, US forces were immersed in a hypothetical situation in the mythical country of Nineveh that was analogous to a possible real-world situation of the early 1980s. A review of US base-development planning and execution over the past 40 years, including the present Rapid Deployment Joint Task Force, raised problems that emerged again in our hypothetical model. Three major issues emerged from the discussion of base-development problems:

- The need for a truly joint service system for base-development planning and execution.
- The need for adequate base-development staffing and a more responsive staff process.
- The need to apply a systems approach to base-development planning, to include the stockage of required materials.

These major topics were subdivided into subordinate issues for further discussion.

The solution of the subissues is essential to resolve the central question of the monograph: How can the United States better meet future base-development requirements of the Rapid Deployment Force?

To upgrade planning and execution of base development and to make sure that this area will no longer be one of the weak links in the deployment of US forces, the issues must be resolved. Some specific recommendations follow.

FOR CONGRESS

- Enact legislation to permit the Department of Defense to subsidize suppliers or manufacturers in maintaining an inventory stockage of base-development-related, war-reserve materials for use by the military when required. (This inventory stockage would supplement the purchase and prestocking of base-development materials by the services.)
- Recognize the importance of base development by encouraging the Department of Defense and the military services to plan, program, and budget for base-development-related spending to support a totally integrated system supporting deployed military forces.

FOR THE DEPARTMENT OF DEFENSE

- In a document such as the *Department of Defense Consolidated Guidance*, provide guidance and incentive to the services to plan and program, applying the systems approach toward achieving a completely integrated force, to include logistical and base-development support of a large deployed fighting force.

FOR THE JOINT CHIEFS OF STAFF

- Define and delineate precisely, using extensive examples, the *standards of living* and the *standards of construction* to insure austerity and uniformity among the services, while recognizing the different tasks performed.
- Direct and provide guidance among the military services to assign responsibility and obtain uniformity with their respective facility component systems, insuring in name and actuality a joint facility component system. However, services should retain the prerogative to add data to the system to meet their peculiar needs.
- Publish a joint manual for base-development planning that will combine and supersede all military service manuals dealing with this subject.

- Continually review and strive for product improvement of the Civil Engineer Support Planning Generator program to enable it to be more responsive to base-development planners and executors.
- Insure that joint-service colleges provide the knowledge and awareness of base-development planning required of future commanders and staff officers.
- Streamline the planning and review process for base-development planning to conserve time when it is critical.
- Insure that the organization of the Joint Chiefs of Staff, unified/specified commands, and joint task forces are adequately staffed to provide proper attention to base-development planning and execution.
- Insure that a systems approach for force structuring and determining materiel requirements is applied when one service depends on other services, such as strategic mobility and port construction and operation.

FOR THE MILITARY SERVICES

- Update and modernize facilities components systems and insure they are responsive to a joint system and special needs of a service.
- Insure that service colleges provide the knowledge and awareness of base-development planning required of future commanders and staff officers and that the appropriate service schools train the base-development planners and logisticians.
- Provide adequate staffing for those headquarters with base-development planning, review, or execution responsibility.
- Apply the systems approach for force structuring and determining materiel requirements to insure the deployability and sustainability of a large force to underdeveloped areas of the world.
- Plan, program, and budget for materiel required for base development in a wide variety of contingencies (to be supplemented by an "on call" government-subsidized inventory stockage maintained by suppliers or manufacturers).

EPILOGUE

The Rapid Deployment Joint Force Task holds no monopoly on problems, since there are shortcomings in base development in Europe, Korea, and other locations where contingency plans exist that have been ignored, dismissed, or inadequately considered. Addressing these problems, considering carefully the lessons learned from past military conflicts, and relating these lessons to the problems that have plagued development of the Rapid Deployment Joint Task Force may enable this highly visible force to serve as a "window to the future." If these issues can be satisfactorily resolved, then the view from the "window" can be rosy. If not, the view will be bleak.

Today, when competition for resources and dollars is especially keen, it is tempting to ignore concerns that do not appear to have a high priority, to represent an immediate need, or to offer a direct combat value. Nevertheless, just as a tall building requires a strong foundation to guarantee that it will not collapse, a military fighting force needs the logistical support and base development to insure that it can be deployed and sustained. The leaders within the defense establishment and Congress must work to preserve that strong foundation.

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ACRONYMS

BADEP	Base-Development Project
BDPAO	Base Development Planning Assistance Office
BOM	Bill of Materiel
CESP	Civil Engineer Support Plan
CESPG	Civil Engineer Support Plan Generator
ENCOM	Engineer Command
JOPS	Joint Operations Planning System
LOC	lines of communication
LOTS	logistics over the shore
OPEC	Organization of Petroleum Exporting Countries
POL	petroleum, oil, and lubricants
RDJTF	Rapid Deployment Joint Task Force
RO/RO	Roll-On/Roll-Off

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